

# Regional geoportals of first-level administrative units of European Union and European Economic Area countries – Comparative Study.

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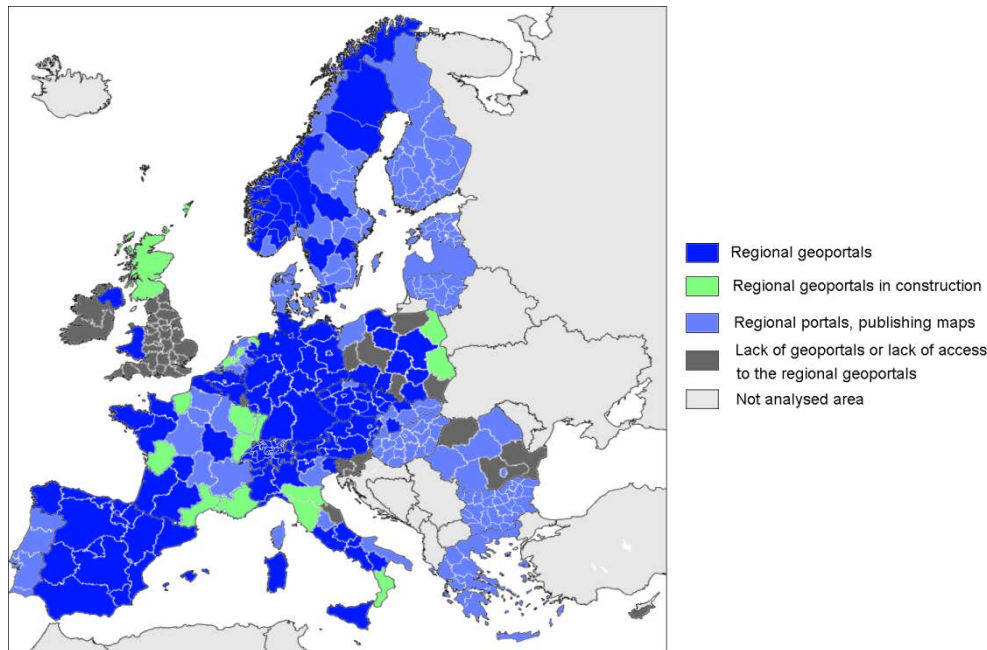
**Abstract.** During last 5 years it was possible to observe a considerable intensification of development of regional geoportals in European Union and European Economic Area (EEA) countries. The authors analysed the thematic scope of geodata published by 130 geoportals of the first-level administrative units of these countries, their functionality, the methods used for data portrayal, and their correctness. This paper proposes the typology of official regional geoinformation services in EU and EEA countries, taking like a criterion the thematic scope of published spatial information, the available functions and employed methods of cartographic presentation.

**Keywords:** Regional geoportals, EU, EEA, INSPIRE

## 1. Introduction

Increasing need for spatial information and its fast publication, advances in web technologies, and legal determinants related to the INSPIRE directive have resulted during last 5 years in a considerable intensification of development of regional geoportals in European Union and European Economic Area (EEA) countries (Bielecka et al., 2010; Dukaczewski, Bielecka, 2010). Recently it is possible to observe the growth of the number of geoportals, an increase in scope of published information and enhancement of the functionality. During last 10 years the number of regional portals publishing webmaps was decreasing in favour of regional geoportals, employing (at least) WMS or WFS solutions and publishing harmonized spatial information (Dukaczewski, 2007; Baranowski et al., 2010). This implies the need for a monitoring of regional geoportals, taking also into the consideration its relations with INSPIRE. According to the survey carried out in September 2012, in EU and EEA countries it was possible to identify 143 re-

gional geoportals of the first–level administrative units<sup>1</sup>. The spatial data were also published through 151 public administration portals of this level. This way the spatial information was published in the case of 87.23 % first–level administration units of EU and EEA countries (42.43 % via geoportals and 44.80 % by administration portals) (*Figure 1*).



**Figure 1.** Identified regional geoportals and public administration portals of first–level administration units of EU and EEA (2012).

During a survey 9 geoportals were temporarily not accessible due to the technical reasons. Access to 4 others was protected with a password. This way it was possible to carry out the analyses concerning 130 geoportals of the first–level administrative units of these countries.

## 2. Objectives and methodology

The aim of the research was an analysis and synthesis of the recent state of development of regional first-level administrative units geoportals of EU and EEA countries. The carried multilingual research on 130 regional geoportals active (and wholly accessible) in the moment of the survey included

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<sup>1</sup> Due to the specificity of administrative divisions of Latvia after reform of 1 July 2009, this survey excluded 110 municipalities and 9 cities of this country

an analysis of the thematic scope of published spatial data, functionalities of geoportals (classified into proposed 46 types of functions, belonging to 7 main groups), employed methods of cartographic presentation (and its semiotic correctness). The carried research allowed to propose two typologies of regional geoportals, taking like a criterion the thematic scope of published spatial information (related to the spatial data themes mentioned in appendices of the INSPIRE directive). The authors have proposed the typology of geoportals, employing criterion of available functions. It was also possible to propose the typology of regional geoportals, taking into the consideration the employed methods of cartographic presentation. The carried investigations allowed to propose a typology of similarities in thematic scope of spatial information published through the regional geoportals, employing the Bertin's method of data processing (Bertin, 1967) and data order algorithm proposed by Ciołkosz-Styk (2011). The authors have proposed also the typology of geoportals, employing the both criterions of number of published thematic groups and number of types of functions. The conducted research and results of previous works on national geoportals (carried out during last 8 years) has demonstrated the specificity of EU and EEA countries regional geoportals. They have also revealed the major trends in the development of these geoportals and allowed to identify the scope of spatial data and services, which need to be more developed. The results will be used to update and to extend the GEMS–Geoportals in Europe Metadata Service, maintained by the Institute of Geodesy and Cartography.

### **3. Results and discussion**

#### **3.1. The thematic scope of geodata published by geoportals of first-level administrative units**

The thematic scope of geodata published by geoportals was very diversified and ranged from 7 to 54 layers, corresponding to 5 (Appenzell Ausserrhoden) till 31 INSPIRE thematic groups (Basque Country). The thematic scope was the most close to the INSPIRE thematic groups in the case of geoportals of Spanish regions (from 14 till 31 groups), Norwegian regions (from 17 groups (Sør-Trøndelag) till 30 groups (Finnmark)) and Swiss regions (from 5 (Appenzell Ausserrhoden) till 30 groups (Aargau)). The thematic scope was less convergent to the INSPIRE thematic groups in the case of regional geoportals of Germany (from 14 groups in the case of Baden-Württemberg, Bavaria till 28 groups (Berlin)), Belgium - from 20 (Brussels) till 26 groups (Walloon Region), Austria – from 19 (Vorarlberg) till 26 groups (Styria, Tyrol), Poland – from 11 (Podlaskie voivodeship, Łódzkie voivodeship) till

25 groups (Opolskie voivodeship), Czech Republic – from 8 (South Bohemian Region) till 25 groups (Plzeň Region) and France - from 11 (Nord-Pas-de-Calais) till 24 groups (Limousin). This kind of similarity was smaller in the case of regional geoportals of Italy (from 10 (Aosta Valley) till 21 groups (Abruzzo)), Slovakia – (from 16 (Nitra Region) till 20 groups (Žilina Region) and Sweden – (from 7 (Dalarna) till 16 groups (Västra Götaland, Östergötland)). It should be stressed that thematic scope was more close to the INSPIRE thematic groups especially in the case of relatively new regional geoportals.

The most widespread spatial data were these concerning the themes corresponding to the scope of I & II INSPIRE appendices (*Table 1*). All analysed geoportals published the data on geographical names. Almost all – about transport networks, hydrography, buildings, addresses, land cover/land use, administrative units, area management/restriction/regulation zones and reporting units, protected sites, elevation, coordinate reference systems, production and industrial facilities, agricultural and aquaculture facilities. 90 % of regional geoportals has published the orthophotomaps. The most seldom published data were these concerning geographical grid systems and oceanographic geographical features.

Annex	INSPIRE thematic group	Data availability	
		Number of cases	Percent of geoportals
I	Coordinate reference systems	111	85,38
	Geographical grid systems	9	6,92
	Geographical names	130	100,00
	Administrative units	128	98,46
	Addresses	101	77,69
	Cadastral parcels	83	63,84
	Transport networks	129	99,23
	Hydrography	129	99,23
	Protected sites	124	95,38
II	Elevation	116	89,23

	Land cover	126	96,92
	Orthoimagery	117	90,00
	Geology	48	36,92
III	Statistical units	41	31,53
	Buildings	109	83,84
	Soil	62	47,69
	Land use	100	76,92
	Human health and safety	81	62,30
	Utility and governmental services	95	73,07
	Environmental monitoring facilities	34	26,15
	Production and industrial facilities	110	84,61
	Agricultural and aquaculture facilities	107	82,30
	Population distribution — demography	15	11,53
	Area management/restriction/regulation zones and reporting units	107	82,30
	Natural risk zones	70	53,84
	Atmospheric conditions	11	8,46
	Meteorological geographical features	35	26,92
	Oceanographic geographical features	3	2,30
	Sea regions	10	7,69
	Bio-geographical regions	55	42,30
	Habitats and biotopes	90	69,23
	Species distribution	35	26,92
	Energy resources	48	36,92
	Mineral resources	27	20,76

**Table 1.** Availability of spatial data corresponding to INSPIRE thematic groups, published by regional geoportals.

It should be emphasized that analysed geoportals published also many other interesting spatial data. About 85% allowed to visualize topographic

maps. Old topographic maps were published by geoportals of Carinthia, Salzburgerland, Styria, Vorarlberg, Vienna, Bavaria, Lower Saxony, Bratislava Region and most of Czech and Swiss regional geoportals. Old orthophotomaps were available via Spanish, Austrian, Czech geoportals and geoportals of Lower Normandy, Oppland, Rogaland. LIDAR data were published by geoportals of Carinthia, Upper Austria, Burgundy, Madrid, Murcia. Geodetic networks data was accessible with majority geoportals of Switzerland and Spain. Data layers on real estate prices were available via geoportals of Prague, Rhineland-Palatinate, Saarland. Forest cadastre was accessible via geoportals of Carinthia, Upper Austria, Salzburgerland, Tyrol, Vorarlberg, Górnej Austrii, Salzburga, Tyrolu, Basque Country, Balearic Islands, Saarland, Saxony, cantons of Zürich, Bern, Oberwalden, while geoportal of Basel-Stadt allowed an access to the tree & shrubs/bush cadastre. Detailed data on sewage networks were published by geoportals of regions of Plzeň, Pardubice, Moravy-Silesia, Zlín, Vysočina, Nitra, Basel-Landschaft, Schaffhausen, Geneva. Most of Swiss regional geoportals, as well as geoportals of Upper Austria, Styria, Vienna, regions of: Plzeň, Karlovy Vary, Pardubice, Morava-Silesia and Limousin published layers on mass transport systems. Information on winter road maintenance systems were published by geoportals of Walloon Region, Burgundy and regions of Ústí, Zlín, Vysočina and Žilina, while traffic conditions layers were available via geoportals of Lower Austria, Upper Austria, Wallonia, regions of Olomouc, Burgundy, Žilina, cantons of Zürich, Graubünden and Neuchâtel. Noise maps were accessible via geoportals of Styria, Tyrol, Małopolskie voivodeship, cantons of Zürich, Lucern, Basel-Stadt, Basel-Landschaft, Aargau, Geneva, Thurgau, Vaud. Traffic accidents maps were published by Opolskie Voivodeship and Pardubice region geoportals. Spatial data on of emission of gases and pollution were available through geoportals of Lower Austria, regions of Wallonia, Pardubice, South Moravia, Berlin, cantons of Zürich, Lucern, Schwyz, Fribourg, Basel-Landschaft, St Gallen and Geneva, while data on discharges and recycling centers – via geoportals of Carinthia, Upper Austria, Salzburgerland, Tyrol, Catalonia, Galicia, regions of Ústí, Pardubice, Nitra, Nord-Pas-de-Calais, cantons of Zürich, Fribourg, Neuchâtel and Świętokrzyskie voivodeship. The sole geoportal publishing spatial data on drugs prevention system was this of Prague. Data on labour market, salaries and unemployment were available in the case of geoportals of Basque Country, Pays de la Loire, Ústí region, cantons of Zürich, Bern and Mazowieckie voivodeship. Informations on social welfare were accessible via geoportals of Lower Austria, Salzburgerland, Opolskie voivodeship and most of Swiss geoportals. The data on national and linguistic structure of society is published rarely. This was the case of geoportals of Navarra, Berlin and Saxony. Many regions employed its geoportals to promote the

knowledge of historical heritage and culture (geoportals of Carinthia, Upper Austria, Styria, Vorarlberg, Vienna, Brussels, Wallonia, Asturias, Balearic Islands, Extremadura, Galicia, Catalonia, Navarra, Basque Country, regions of Karlovy Vary, Pardubice, Moravia–Silesia, Vysočina, Slovak regions, Västra Götaland and Östergötland). Majority of regional geoportals published data on tourist trails, bicycle and horse paths, ski runs, weather, insolation and accommodation. It should be emphasized that Swiss and Norwegian regional geoportals are European leaders in the field in a volume of published social data.

### 3.2. Functionality

The state of development of user interface of analysed geoportals was very diversified. Analysis allowed to generalize identified functions into the 46 types, belonging to the main 7 groups: **navigation** (hide/show of preview, extent; back; repeat; zoom in; zoom out; pan; fit in center; full extent; fit to visualised layer; fit to selected layer; fit to selected area; fit to defined selection; fit to selected coordinates; scale selection), **administration of layers** (add layer; remove layer; remove all layers; bring to front / bring forward; send backward / send to back; lock the map against the overload; sort by category; show at map), **visualization** (new window; legend/layers; configure; show sections/sheets borders; tools: segment, broken line, circle, box, rectangle, rhomboid, freehand, text, line, delete), **query** (attribute query/layer query; introduce the coordinates; find named place), **metadata** (metadata viewer), **simple analyses** (line measure; area measure; coordinates; selection with point; selection with rectangle; selection with circle; selection with polygon; object parameters/area information; remove selection; logical selection; buffers; way finding, **others functions** (transformation of map coordinates; selection of system of coordinates; copy to clipboard; print). Number of functions varied from 5 (geoportal of South Bohemian Region) till 37 (Norwegian Hordaland).

Majority of regional geoportals were well-equipped with interfaces of functions of navigation, basic functions of administration of layers, visualization and simple analyses (*Table 2*). Most frequently available functions of interface were: zoom-in, zoom-out, pan, legend/layers panel, line measure, attribute query, selection with point, object parameters/area information, full extent, configure, find named place, print, coordinates measure, area measure, hide/show of preview, scale selection, back, copy to clipboard. 106 regional geoportals were equipped with metadata viewer. Very rare functions were: remove all layers (19 cases), fit to selected area (16), selection with circle, buffers (15). The most rare available functions were: way finding (13 cases), new window, bring to front/bring forward; send backward/send to back (9), fit to selected layer (6 cases).

Group of functions	Type of function	Access to the type of function	
		Number of cases	Percent of geoportals
Navigation	Hide/show of preview, extent	101	77,69
	Back	96	73,84
	Repeat	76	54,46
	Zoom in	130	100
	Zoom out	129	99,23
	Pan	129	99,23
	Fit in center	50	38,46
	Full extent	117	90
	Fit to visualised layer (s)	6	4,61
	Fit to selected layer (s)	6	4,61
	Fit to selected area	16	12,30
	Fit to defined selection	6	4,61
	Fit to selected coordinates	32	24,61
	Scale selection	101	77,69
Administration of layers	Add layer	120	92,30
	Remove layer	120	92,30
	Remove all layers	19	14,61
	Bring to front / bring forward; send backward / send to back	9	6,92
	Lock the map against the overload	9	6,92
	Sort by category	11	8,46
	Show at map	122	93,84
Visualization	New window	9	6,92



	Legend / Layers	128	98,46
	Configure	116	89,23
	Show sections / sheets borders	22	16,92
	Tools: segment, broken line, circle, box, rectangle, romboïd, freehand, text, line, delete	64	49,23
Query	Attribute query / layer query	121	93,07
	Introduce the coordinates	69	53,07
	Find named place	115	88,46
Metadata	Metadata viewer	106	81,53
Simple analyses	Line measure	122	93,84
	Area measure	104	80
	Coordinates	110	84,61
	Selection with point	118	90,76
	Selection with rectangle	51	39,23
	Selection with circle	15	11,53
	Selection with polygon	41	31,53
	Object parameters / area information	118	90,76
	Remove selection	54	41,53
	Logical selection	122	93,84
	Buffers	15	11,53
	Way finding	13	10
Others functions	Transformation of map coordinates system / projection / geoïde	41	31,53
	Selection of system of coordinates	40	30,76
	Copy to clipboard	92	70,76
	Print	110	84,61

**Table 2.** Availability of functions of analysed regional geoportals.

Several regional geoportals have two (or more) versions of interface. Such a solutions were employed in the case of geoportals of Saxony, Saxony-

Anhalt, Bavaria, Schwyz, Zug, Schaffhausen and Thurgau. It exists also the versions of interface dedicated to mobile devices (i.e. geoportal of Flemish Region). It should be stressed, that some interfaces includes very interesting functions. In the case of geoportals of Upper Austria, Prague, Plzeň Region, Drenthe, Overijssel, Bratislava, Dalarna and Norrbotten it was possible to adjust the transparency of layers. During last few years it was possible to observe dramatic progress in development of queries. In the past most of geoportals allowed to make a query with adress, name of place or administrative unit. Now it is possible also with special divisions units (i.e. post, police, school, medical, forest and hunting units), map sheets, land register numbers, numbers of parcels, numbers of insurance, geographical and geodetical coordinates, river basins, key words, INSPIRE themes, name of spatial data or name of it's authors (i.e. geoportal of Limousin). Very interesting solution, allowing to compare the layers was applied in a interface of geoportal of Madrid region. Relatively more developed possibilities of spatial analyses were available in the case of geoportals of Lower Normandy, Nord-Pas-de-Calais, Pays de la Loire and Limousin.

### 3.3. Methods used in the portrayal of data and their correctness

The appropriate selection of cartographic method of presentation (or its combination), as well as semiologically correct choice of visual variables at relevant level of measurement is *a sine qua non* condition of effectiveness of communication. This choice must be very careful in the case of public data, which are available via official regional geoportals. The analysed 130 geoportals employed 13 of 24 main types of methods of cartographic presentation. It was possible to identify 5 qualitative methods: chorochromatic method (MCa), qualitative area symbols (S<sub>ya</sub>), qualitative line symbols (S<sub>βa</sub>), qualitative point symbols (S<sub>ca</sub>), range maps (MZa), as well as 4 ordinary methods: ordinary point symbols (S<sub>cb</sub>) and ordinary line symbols (S<sub>βb</sub>), ordinary area symbols (S<sub>βb</sub>), ordinary area choropleth maps (K<sub>yb</sub>), and 4 quantitative methods: quantitative line signatures (S<sub>βc</sub>), quantitative area choropleth maps (K<sub>yc</sub>), quantitative line choropleth maps (K<sub>βc</sub>), quantitative area cartodiagrams/diagrammatic maps (K<sub>dyc</sub>). Taking like a criterion a percentage of published layers in the case of which the quantitative methods were employed it was possible to distinguish 4 groups of geoportals:

- of relatively big part (more than 20 %) of quantitative methods (geoportals of Lower Normandy, Nord-Pas-de-Calais, Pays de Loire, Limousin);
- of significant part (20 % – 11 %) of quantitative methods (geoportals of Mazowieckie Voivodeship, Ústí Region, Basque Country, region of

Berlin, Rhineland-Palatinate, Saarland, Saxony, cantons of Bern, Zürich, Graubünden;

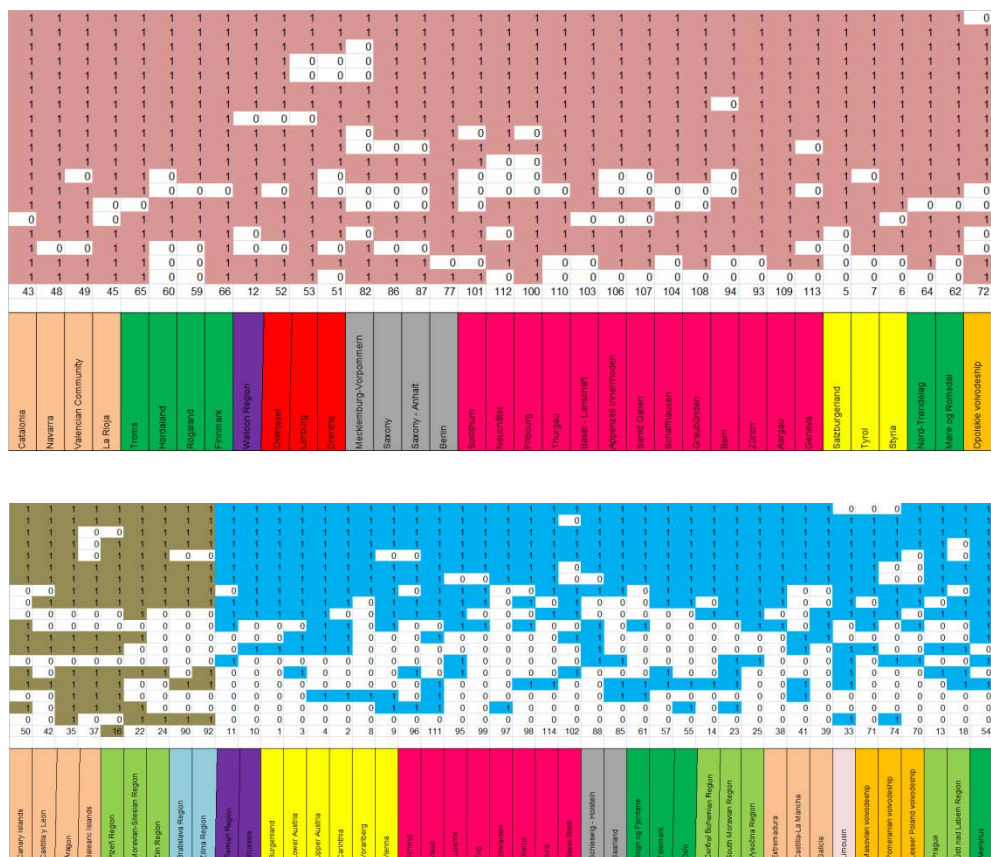
- of relatively little part (10 % - 2 %) of quantitative methods (geoportals of Lower Austria, Styria, Tyrol, Wallonia, regions of Prague, Pardubice, South Moravia, Małopolskie voivodeship, cantons of Luzern, Solothurn, Fribourg, Basel-Stadt, Basel-Landschaft, Aargau, Thurgau, St.Gallen, Geneva);
- of big predominance of qualitative methods (other 98 regional geoportals).

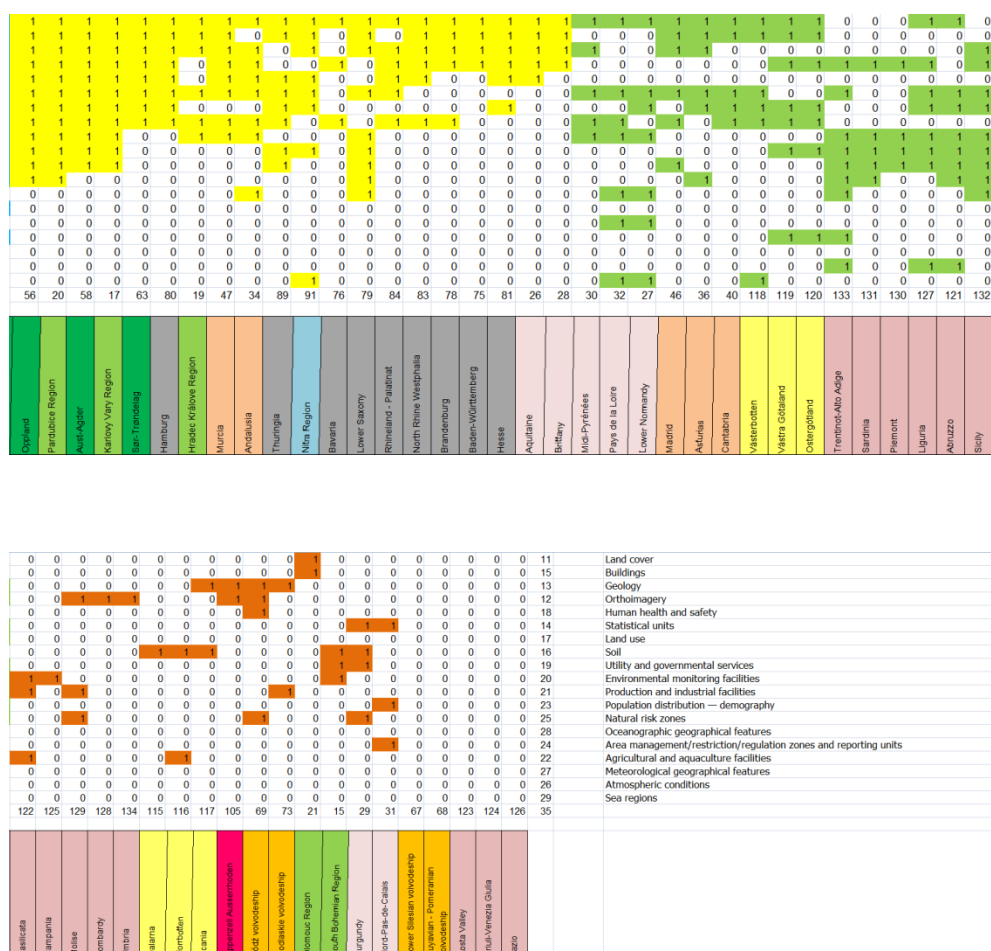
Most of methods was employed correctly, in conformity with semiotic rules and cartographic methodology. In the case of few geoportals it was possible to find errors (i.e. employment of absolute values in the case of quantitative area choropleth maps, incomplete legends, lack of legends, size of symbols). Other observed errors were wrong name positions and lack of data harmonization.

#### **3.4. Typology of similarities in thematic scope of spatial information published through the regional geoportals**

The carried investigations allowed to propose a typology of similarities in thematic scope of spatial information published through the regional geoportals, employing the Bertin's method of data processing (Bertin, 1967) and data processing algorithm proposed by Ciołkosz-Styk (2011). The first stage of data processing was preparation of two dimensional binary matrix with columns representing regional geoportals and rows representing the thematic groups of INSPIRE appendices. Then it was necessary to assume classification thresholds, which would exclude elements of common or sporadic appearance. It was assumed that these thresholds are 80% and 10%, respectively. The asymmetry of thresholds arose due to the results of the tests, which has demonstrate that 10 % is the first percentage value, which allow to distinguish groups of geoportals of similar thematic scope. The assumption of higher threshold could result in elimination of a big part of the groups. The application of threshold of 90% is not effective, as the common features aren't distinctive. The object of next stages of data processing were 19 INSPIRE thematic groups. The next step was graphical permutation of columns and rows of input matrix to obtain uniform groups in output matrix. At first phase the succeeding rows were compared and segregated according to maximum similarity. Then matrix was divided into independent columns, which were also compared and rearranged according to maximum similarity. To rearrange the data into the output matrix an algorithm of A. Ciołkosz–Styk was employed. The main aim of this algorithm is to calculate similarity between two compared vectors of data, which is proportional to logical conjunction of the elements of these vectors. Due to the possible different

number of elements appearing in each vector the logical conjunction needs to be normalized, which is done through calculation of logical disjunction of compared vectors (Báguena Orús, 2003). Resultant similarity of two compared vectors can be calculated as their logic conjunction divided by logical disjunction. At the employed method of data reorganization iterative comparison of succeeding vectors and positioning them according to maximum similarity, with respect to previously selected, was used. Vector with the highest similarity was selected and placed next to the one, which served for comparison. At the consecutive step the remaining vectors were compared to lately selected one. Again, vector with highest similarity was chosen and placed next to that, which served for comparison. This procedure was repeated until all vectors were arranged in proper order. The result was the output matrix with most similar neighbouring vectors (rows or columns), which was employed for visual aggregation of areas of similar features. This way it was possible to distinguish 6 groups of regional geoportals (*Figure 2*).





**Figure 2.** Typology of similarities in thematic scope of spatial information published through the regional geoportals, employing the Bertin's method of data processing.

### 3.5. Typology of geoportals, employing criteria of number of published thematic groups and number of types of functions

Taking like a criterion the number of published thematic groups, (corresponding to INSPIRE thematic groups), as well as number of available functions it was possible to distinguish 3 main groups of regional geoportals (Figure 3):

- of little number of functions and reduced thematic scope of published data (geoportals of: South Bohemian region, Aosta Valley, Basel-Landschaft);
- of average number of functions & thematic scope (geoportals of: Bavaria, Asturia, Cantabria, Apulia, Molise, Friuli-Venezia Giulia, Emilia-Romagna, Lazio, Basilicata, Dolnośląskie, Kujawsko – pomorskie, Łódzkie, Pomorskie and Podlaskie voivodeship, Dalarna, Norrbotten, Skåne and Västerbotten);
- of average and big number of functions and medium or rich thematic scope (111 regional geoportals).

Isolated case is a geoportal of Ústí Region of relatively big number functions and reduced thematic scope.



## 4. Conclusion

During last few years it was possible to observe the growth of the number of regional geoportals of first level administrative units in EU and EEA countries, an increase in scope of published information and enhancement of the functionality, especially concerning view and discovery services. The state of development of functions of interface of regional geoportals is very diversified. It should be emphasized that majority of geoportals have an interface with well developed functions of navigation, visualization and administration of layers. However, it must be stressed that functions of spatial analyses and invoke services needs to be more developed in the near future. Few regional geoportals were equipped into the special user interface, dedicated to the professional users, as well as versions for mobile devices. The thematic scope of published data is relatively diversified and depends on local needs for spatial data, its availability, as well as state data policy. It should be stressed, that during last few years it is possible to observe in EU and EEA countries a trend to publish data, corresponding to INSPIRE thematic groups. The regional geoportals publish also spatial data, which are essential for promotion of regions (i.e. data on cultural and historical heritage, tourist areas & infrastructure). It is to emphasize that during last few years it was possible to observe in the case of regional geoportals a considerable progress in respecting rules of semiotics and cartographic methodology. Relatively big part of regional geoportals is a component of regional spatial infrastructures. However, it is worth to mention, that in part of the EU and EEA countries there are till now no law regulations concerning regional and local spatial infrastructures, which can provoke a slowdown in the process of regional data harmonization.

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## Appendix 1

### AUSTRIA

Symbol	Region	Address of geoportal
A1	Burgenland	<a href="http://gis.bglb.qv.at/WebGIS/synserver?project=Kataster">http://gis.bglb.qv.at/WebGIS/synserver?project=Kataster</a>
A2	Carinthia	<a href="http://www.kagis.ktn.qv.at/19948_DE">http://www.kagis.ktn.qv.at/19948_DE</a>
A3	Lower Austria	<a href="http://www.noel.qv.at/Land-Zukunft/Karten-Geoinformation.html">http://www.noel.qv.at/Land-Zukunft/Karten-Geoinformation.html</a>
A4	Upper Austria	<a href="http://doris.ooe.qv.at/">http://doris.ooe.qv.at/</a>
A5	Salzburgerland	<a href="http://service.salzburg.qv.at/qisonline/(S(v4jd5445oxudrxepmic3mq45))/init.aspx?karte=default">http://service.salzburg.qv.at/qisonline/(S(v4jd5445oxudrxepmic3mq45))/init.aspx?karte=default</a>
A6	Styria	<a href="http://www.gis.steiermark.at/">http://www.gis.steiermark.at/</a>
A7	Tyrol	<a href="http://www.tirol.qv.at/themen/zahlen-und-fakten/statistik-tiris/tiris-kartendienste/tiris">http://www.tirol.qv.at/themen/zahlen-und-fakten/statistik-tiris/tiris-kartendienste/tiris</a>
A8	Vorarlberg	<a href="http://www.vorarlberg.at/vorarlberg/bauen_wohnen/bauen/landesvermessungsamt/weitereinformationen/services/vorarlbergatlas/vorarlbergatlasuebersicht.htm">http://www.vorarlberg.at/vorarlberg/bauen_wohnen/bauen/landesvermessungsamt/weitereinformationen/services/vorarlbergatlas/vorarlbergatlasuebersicht.htm</a>
A9	Vienna	<a href="http://www.wien.qv.at/viennagis/">http://www.wien.qv.at/viennagis/</a>

### BELGIUM

Symbol	Region	Address of geoportal
B1	Brussels	<a href="http://staging.gis.irisnet.be/geonetwork/">http://staging.gis.irisnet.be/geonetwork/</a> <a href="http://staging.gis.irisnet.be/geonetwork/srv/fr/links">http://staging.gis.irisnet.be/geonetwork/srv/fr/links</a>
B2	Flemish Region	<a href="http://www.agiv.be/gis/diensten/geo-vlaanderen/">http://www.agiv.be/gis/diensten/geo-vlaanderen/</a>
B3	Walloon Region	<a href="http://www.wallonie.be/fr/index.html">http://www.wallonie.be/fr/index.html</a> <a href="http://cartographie.wallonie.be/NewPortailCarto/">http://cartographie.wallonie.be/NewPortailCarto/</a>

### CZECH REPUBLIC

Symbol	Region	Address of geoportal
CZ1	Prague	<a href="http://www.geoportalpraha.cz/">http://www.geoportalpraha.cz/</a>
CZ2	Central Bohemian Region	<a href="http://mapy.kr-stredocesky.cz/">http://mapy.kr-stredocesky.cz/</a> <a href="http://mapy.kr-stredocesky.cz/mapserv/map/?SID=&amp;lang=cze">http://mapy.kr-stredocesky.cz/mapserv/map/?SID=&amp;lang=cze</a>
CZ3	South Bohemian Region	<a href="http://gis.kraj-jihocesky.cz/">http://gis.kraj-jihocesky.cz/</a>
CZ4	Pilsen Region	<a href="http://www.pizensky-kraj.cz/cs/node/23999">http://www.pizensky-kraj.cz/cs/node/23999</a>
CZ5	Karlovy Vary Region	<a href="http://www.kr-karlovarsky.cz/GIS">http://www.kr-karlovarsky.cz/GIS</a>
CZ6	Ústí nad Labem Region	<a href="http://gis.kr-ustecky.cz/site/index.html">http://gis.kr-ustecky.cz/site/index.html</a>
CZ7	Hradec Kralove Region	<a href="http://gis.kr-kralovehradecky.cz/">http://gis.kr-kralovehradecky.cz/</a>
CZ8	Pardubice Region	<a href="http://www.pardubickykraj.cz/gis">http://www.pardubickykraj.cz/gis</a>
CZ9	Olomou region	<a href="http://www.kr-olomoucky.cz/">http://www.kr-olomoucky.cz/</a>

		<a href="http://mapy.kr-olomoucky.cz/">http://mapy.kr-olomoucky.cz/</a>
CZ10	Moravian-Silesian Region	<a href="http://verejna-sprava.kr-moravskoslezsky.cz/mapy_qis.html">http://verejna-sprava.kr-moravskoslezsky.cz/mapy_qis.html</a>
CZ11	South Moravian Region	<a href="http://mapy.kr-jihomoravsky.cz/(S(t553knlt2baovnirolz55))/Default.aspx?mode=TextMeta&amp;ext=uvod_uvod&amp;menu=1&amp;side=side_uvod&amp;news=yes&amp;UvodniStrana=yes">http://mapy.kr-jihomoravsky.cz/(S(t553knlt2baovnirolz55))/Default.aspx?mode=TextMeta&amp;ext=uvod_uvod&amp;menu=1&amp;side=side_uvod&amp;news=yes&amp;UvodniStrana=yes</a>
CZ12	Zlin Region	<a href="http://vms4.kr-zlinsky.cz/tms/ukmzk/index.php?frame">http://vms4.kr-zlinsky.cz/tms/ukmzk/index.php?frame</a>
CZ13	Vysočina Region	<a href="http://www.kr-vysocina.cz/qis.asp">http://www.kr-vysocina.cz/qis.asp</a>

#### FRANCE

Symbol	Region	Address of geoportal
F1	Aquitaine	<a href="http://www.pigma.org/web/10157/36">http://www.pigma.org/web/10157/36</a>
F2	Lower Normandy	<a href="http://siq.cr-basse-normandie.fr/index.php/atlas">http://siq.cr-basse-normandie.fr/index.php/atlas</a>
F3	Brittany	<a href="http://qeobretagne.fr/accueil/">http://qeobretagne.fr/accueil/</a>
F4	Burgundy	<a href="http://www.region-bourgogne.fr/Mapy.35.intl.pl">http://www.region-bourgogne.fr/Mapy.35.intl.pl</a>
F5	Midi-Pyrénées	<a href="http://www.midipyrenees.fr/carto/territoire/territoire.html">http://www.midipyrenees.fr/carto/territoire/territoire.html</a>
F6	Nord-Pas-de-Calais	<a href="http://carto.nordpasdecalais.fr/npdc/index.php#">http://carto.nordpasdecalais.fr/npdc/index.php#</a>
F7	Pays de la Loire	<a href="http://ores.paysdelaloire.fr/Geodip_atlas/carto.php?lang=fr">http://ores.paysdelaloire.fr/Geodip_atlas/carto.php?lang=fr</a>
F8	Limousin	<a href="http://www.qeolimousin.fr/accueil">http://www.qeolimousin.fr/accueil</a>

#### GERMANY

Symbol	Region	Address of geoportal
D1	Baden-Württemberg	<a href="http://www.geoportal-bw.de/geoportal/opencms/de/index.html">http://www.geoportal-bw.de/geoportal/opencms/de/index.html</a>
D2	Bavaria	<a href="http://geoportal.bayern.de/GeoportalBavern/">http://geoportal.bayern.de/GeoportalBavern/</a>
D3	Berlin	<a href="http://www.stadtentwicklung.berlin.de/geoinformation/">http://www.stadtentwicklung.berlin.de/geoinformation/</a>
D4	Brandenburg	<a href="http://geoportal.brandenburg.de/">http://geoportal.brandenburg.de/</a>
D5	Lower Saxony	<a href="http://www.geodaten.niedersachsen.de/portal/live.php?navigation_id=8648&amp;psmand=28">http://www.geodaten.niedersachsen.de/portal/live.php?navigation_id=8648&amp;psmand=28</a>
D6	Hamburg	<a href="http://geoportal.metropolregion.hamburg.de/mrhportal/index.html">http://geoportal.metropolregion.hamburg.de/mrhportal/index.html</a>
D7	Hesse	<a href="http://www.geoportal.hessen.de/">http://www.geoportal.hessen.de/</a>
D8	Mecklenburg-Vorpommern	<a href="http://www.geoportal-mv.de/land-mv/GeoPortalMV_prod/de/Startseite/index.jsp">http://www.geoportal-mv.de/land-mv/GeoPortalMV_prod/de/Startseite/index.jsp</a>
D9	North Rhine-Westphalia	<a href="https://www.geoportal.nrw.de/">https://www.geoportal.nrw.de/</a>
D10	Rhineland-Palatinate	<a href="http://www.geoportal.rlp.de/">http://www.geoportal.rlp.de/</a> <a href="http://www.geoportal.rlp.de/">http://www.geoportal.rlp.de/</a>
D11	Saarland	<a href="http://geoportal.saarland.de/mapbender/geoportal/mod_index.php?mb_user_myGui=Geoportal-SL">http://geoportal.saarland.de/mapbender/geoportal/mod_index.php?mb_user_myGui=Geoportal-SL</a>

D12	Saxony	<a href="http://www.gdi.sachsen.de/">http://www.gdi.sachsen.de/</a>
D13	Saxony-Anhalt	<a href="http://www.lvermgeo.sachsen-anhalt.de/">http://www.lvermgeo.sachsen-anhalt.de/</a>
D14	Schleswig-Holstein	<a href="http://www.gdi-sh.de/">http://www.gdi-sh.de/</a>
D15	Thuringia	<a href="http://www.geoproxy.geoportal-th.de/geodient/control">http://www.geoproxy.geoportal-th.de/geodient/control</a>

#### ITALY

Symbol	Region	Address of geoportal
I1	Abruzzo	<a href="http://www.regione.abruzzo.it/xcartografia/">http://www.regione.abruzzo.it/xcartografia/</a>
I2	Apulia	<a href="http://webgis.sit.puglia.it/sit-help/SIT-Puglia/Guida/Sit-Cittadino/Standard-Ogc.html">http://webgis.sit.puglia.it/sit-help/SIT-Puglia/Guida/Sit-Cittadino/Standard-Ogc.html</a>
I3	Basilicata	<a href="http://rsdi.regione.basilicata.it/web/quest;jsessionid=1B65356AC165CAADDE48D8E84E1231AF">http://rsdi.regione.basilicata.it/web/quest;jsessionid=1B65356AC165CAADDE48D8E84E1231AF</a>
I4	Aosta Valley	<a href="http://geonavscit.partout.it/pub/cartoweb/">http://geonavscit.partout.it/pub/cartoweb/</a>
I5	Emilia-Romagna	<a href="http://ambiente.regione.emilia-romagna.it/geologia/cartografia">http://ambiente.regione.emilia-romagna.it/geologia/cartografia</a>
I6	Friuli-Venezia Giulia	<a href="http://www.regione.fvg.it/rafvq/cms/RAFVG/AT9/ARG13;jsessionid=7C4A16B25B435A75C263DD603B054F76">http://www.regione.fvg.it/rafvq/cms/RAFVG/AT9/ARG13;jsessionid=7C4A16B25B435A75C263DD603B054F76</a>
I7	Calabria	<a href="http://pr5sit.regione.calabria.it/web/pr5sit/home">http://pr5sit.regione.calabria.it/web/pr5sit/home</a>
I8	Campania	<a href="http://sit.regione.campania.it/porta1">http://sit.regione.campania.it/porta1</a>
I9	Lazio	<a href="http://www.urbanisticaecasa.regione.lazio.it/cartografia_on_line/">http://www.urbanisticaecasa.regione.lazio.it/cartografia_on_line/</a>
I10	Liguria	<a href="http://www.cartografia.regione.liguria.it/">http://www.cartografia.regione.liguria.it/</a>
I11	Lombardy	<a href="http://www.cartografia.regione.lombardia.it/geoportale">http://www.cartografia.regione.lombardia.it/geoportale</a>
I12	Molise	<a href="http://geoportale.protezionecivile.molise.it/gov">http://geoportale.protezionecivile.molise.it/gov</a>
I13	Piemont	<a href="http://www.regione.piemonte.it/geo piemonte/">http://www.regione.piemonte.it/geo piemonte/</a>
I14	Sardinia	<a href="http://www.sardegna geoportale.it/">http://www.sardegna geoportale.it/</a>
I15	Sicily	<a href="http://www.sitr.regione.sicilia.it/content/view/27/50/">http://www.sitr.regione.sicilia.it/content/view/27/50/</a> <a href="http://www.sitr.regione.sicilia.it/geoportale/it/Home/GeoViewer">http://www.sitr.regione.sicilia.it/geoportale/it/Home/GeoViewer</a>
I16	Tuscany	<a href="http://www.regione.toscana.it/territorio/cartografia/index.html">http://www.regione.toscana.it/territorio/cartografia/index.html</a> <a href="http://www.rete.toscana.it/sett/territorio/carto/">http://www.rete.toscana.it/sett/territorio/carto/</a>
I17	Trentino-Alto Adige	<a href="http://www.territorio.provincia.tn.it/">http://www.territorio.provincia.tn.it/</a> <a href="http://www.provincia.bz.it/informatica/temi/maps-webgis.asp">http://www.provincia.bz.it/informatica/temi/maps-webgis.asp</a>

#### NETHERLAND

Symbol	Region	Address of geoportal
NL1	Drenthe	<a href="http://www.provincie.drenthe.nl/loket/kaartmateriaal/">http://www.provincie.drenthe.nl/loket/kaartmateriaal/</a>
NL2	Overijssel	<a href="http://qisopenbaar.overijssel.nl/website/atlasoverijssel/atlasoverijssel.html">http://qisopenbaar.overijssel.nl/website/atlasoverijssel/atlasoverijssel.html</a>
NL3	Limburg	<a href="http://portal.pvlimburg.nl/geo_dataportaal/viewer.do">http://portal.pvlimburg.nl/geo_dataportaal/viewer.do</a>

## NORWAY

Symbol	Region	Address of geoportal
N1	Akershus	<a href="http://kartinakershus.akershus-fk.no/KartinAkershus/">http://kartinakershus.akershus-fk.no/KartinAkershus/</a>
N2	Oslo	<a href="http://webhotel2.qisline.no/oslokart/">http://webhotel2.qisline.no/oslokart/</a>
N3	Oppland	<a href="http://www.innlandsgis.no/innlandsgis/">http://www.innlandsgis.no/innlandsgis/</a>
N4	Telemark	<a href="http://213.236.220.134/Content/Main.asp?layout=fmbute&amp;time=1337604869&amp;wv=r=asv">http://213.236.220.134/Content/Main.asp?layout=fmbute&amp;time=1337604869&amp;wv=r=asv</a>
N5	Aust-Agder	<a href="http://kart.austagderfk.no/default.aspx?qui=1&amp;lang=2">http://kart.austagderfk.no/default.aspx?qui=1&amp;lang=2</a>
N6	Rogaland	<a href="http://www.temakart-rogaland.no/default.aspx?qui=1&amp;lang=3">http://www.temakart-rogaland.no/default.aspx?qui=1&amp;lang=3</a>
N7	Hordaland	<a href="http://www.kart.ivist.no/geocortex/essentials/Default/web/Viewer.aspx?Site=Hordaland&amp;ReloadKey=False">http://www.kart.ivist.no/geocortex/essentials/Default/web/Viewer.aspx?Site=Hordaland&amp;ReloadKey=False</a>
N8	Sogn og Fjordane	<a href="http://www.fylkesatlas.no/default.aspx?qui=1&amp;lang=3">http://www.fylkesatlas.no/default.aspx?qui=1&amp;lang=3</a>
N9	Møre og Romsdal	<a href="http://www.qislink.no/qislink/">http://www.qislink.no/qislink/</a>
N10	Sør-Trøndelag	<a href="http://www.qislink.no/stfk/index.jsp">http://www.qislink.no/stfk/index.jsp</a>
N11	Nord-Trøndelag	<a href="http://www.qint.no/default.aspx?qui=1&amp;lang=2">http://www.qint.no/default.aspx?qui=1&amp;lang=2</a>
N12	Troms	<a href="http://www.tromsatlas.no/default.aspx?qui=1&amp;lang=2">http://www.tromsatlas.no/default.aspx?qui=1&amp;lang=2</a>
N13	Finnmark	<a href="http://www.nordatlas.no/default.aspx?qui=1&amp;lang=2">http://www.nordatlas.no/default.aspx?qui=1&amp;lang=2</a>

## POLAND

Symbol	Region	Address of geoportal
PL1	Kujawsko-Pomorskie	<a href="http://geoportal.infoteren.pl/portal/">http://geoportal.infoteren.pl/portal/</a>
PL2	Lubelskie	<a href="http://www.lubelskie.pl/">http://www.lubelskie.pl/</a>
PL3	Łódzkie	<a href="http://www.rsip.lodzkie.pl">http://www.rsip.lodzkie.pl</a>
PL4	Małopolskie	<a href="http://www.geomalopolska.pl/">http://www.geomalopolska.pl/</a>
PL5	Mazowieckie	<a href="http://www.wrotamazowska.pl">http://www.wrotamazowska.pl</a>
PL6	Opolskie	<a href="http://www.osip.opole.pl/portal/">http://www.osip.opole.pl/portal/</a>
PL7	Podlaskie	<a href="http://www.psip.wrotapodlasia.pl/WODGIK/">http://www.psip.wrotapodlasia.pl/WODGIK/</a>
PL8	Pomorskie	<a href="http://www.pomorskie.eu/pl/mapy/inter_mapy_woj/">http://www.pomorskie.eu/pl/mapy/inter_mapy_woj/</a>
PL9	Świętokrzyskie	<a href="http://map.wrota-swietokrzyskie.pl/wrotasw/mapa/">http://map.wrota-swietokrzyskie.pl/wrotasw/mapa/</a>

## SLOVAKIA

Symbol	Region	Address of geoportal
SK1	Bratislava Region	<a href="http://www.region-bsk.sk/danok/geoportal-bsk-informacny-system-verejnejspravy-441006.aspx">http://www.region-bsk.sk/danok/geoportal-bsk-informacny-system-verejnejspravy-441006.aspx</a>
SK2	Nitra Region	<a href="http://gis.unsk.sk/">http://gis.unsk.sk/</a>
SK3	Žilina Region	<a href="http://www.zask.sk/showdoc.do?docid=8214">http://www.zask.sk/showdoc.do?docid=8214</a>

## SPAIN

Symbol	Region	Address of geoportal
SP1	Andalusia	<a href="http://www.ideandalucia.es/IDEAvisor/">http://www.ideandalucia.es/IDEAvisor/</a>
SP2	Aragon	<a href="http://sitar.aragon.es/">http://sitar.aragon.es/</a>
SP3	Asturias	<a href="http://www.cartografia.princast.es/cartositpa/">http://www.cartografia.princast.es/cartositpa/</a>
SP4	Balearic Islands	<a href="http://www.ideib.cat/index.php?newlang=spanish">http://www.ideib.cat/index.php?newlang=spanish</a>
SP5	Extremadura	<a href="http://www.ideextremadura.es/Geoportal/">http://www.ideextremadura.es/Geoportal/</a>
SP6	Galicja	<a href="http://sitga.xunta.es/sitganet/">http://sitga.xunta.es/sitganet/</a>
SP7	Cantabria	<a href="http://www.territoriodecantabria.es/Publica/cartografia.aspx">http://www.territoriodecantabria.es/Publica/cartografia.aspx</a>
SP8	Castilla-La Mancha	<a href="http://ide.jccm.es/">http://ide.jccm.es/</a>
SP9	Castilla y León	<a href="http://www.sitcyl.jcyl.es/sitcyl/home.sit">http://www.sitcyl.jcyl.es/sitcyl/home.sit</a> <a href="http://www.sitcyl.jcyl.es/smap/index.jsp">http://www.sitcyl.jcyl.es/smap/index.jsp</a>
SP10	Catalonia	<a href="http://www.geoportal-idec.cat/geoportal/cat/">http://www.geoportal-idec.cat/geoportal/cat/</a>
SP11	Basque Country	<a href="http://www.geo.euskadi.net/s69-8241/es/">http://www.geo.euskadi.net/s69-8241/es/</a>
SP12	La Rioja	<a href="http://www.iderioja.larioja.org/">http://www.iderioja.larioja.org/</a>
SP13	Madrid	<a href="http://www.madrid.org/cartografia/ide/html/web/index.htm">http://www.madrid.org/cartografia/ide/html/web/index.htm</a>
SP14	Murcia	<a href="http://www.cartomur.com/">http://www.cartomur.com/</a>
SP15	Navarra	<a href="http://idena.navarra.es/busquedas/catalog/main/home.page">http://idena.navarra.es/busquedas/catalog/main/home.page</a>
SP16	Valencian Community	<a href="http://terrasit.gva.es/">http://terrasit.gva.es/</a>
SP17	Canary Islands	<a href="http://www.idecan.grafcan.es/idecan/">http://www.idecan.grafcan.es/idecan/</a>

## SWEDEN

Symbol	Region	Address of geoportal
S1	Dalarna	<a href="http://ext-webbqis.lansstyrelsen.se/Dalarna/Planeringsunderlag/?&amp;bbox=316348,6887931,504807,6786941&amp;LST%20Bakgrundskarta=visible,ArcGISLayer&amp;Bakgrundskarta%20Norge%20(WMS)=hidden,WMSLayer.http://wms.geonorge.no/skwms1/wms.toporaster2.topografiskaster&amp;Planeringsunderlag=visible,ArcGISLayer,242,243,244,246,271,272,279,280,308">http://ext-webbqis.lansstyrelsen.se/Dalarna/Planeringsunderlag/?&amp;bbox=316348,6887931,504807,6786941&amp;LST%20Bakgrundskarta=visible,ArcGISLayer&amp;Bakgrundskarta%20Norge%20(WMS)=hidden,WMSLayer.http://wms.geonorge.no/skwms1/wms.toporaster2.topografiskaster&amp;Planeringsunderlag=visible,ArcGISLayer,242,243,244,246,271,272,279,280,308</a>
S2	Norrbottn	<a href="http://ext-webbqis.lansstyrelsen.se/Norrbottn/Planeringsunderlag/">http://ext-webbqis.lansstyrelsen.se/Norrbottn/Planeringsunderlag/</a>
S3	Skåne	<a href="http://geoservices.lst.se/Dikningsforetag">http://geoservices.lst.se/Dikningsforetag</a>
S4	Västerbotten	<a href="http://qislab.lst.se/Skoterforbud/default.aspx">http://qislab.lst.se/Skoterforbud/default.aspx</a>
S5	Västra Götaland	<a href="http://qisvq.lst.se/website/qisvq/htm/viewer.asp">http://qisvq.lst.se/website/qisvq/htm/viewer.asp</a>
S6	Östergötland	<a href="http://qise.lst.se/qise/htm/viewer.asp">http://qise.lst.se/qise/htm/viewer.asp</a>

SWITZERLAND

Symbol	Region	Address of geoportal
CH1	Zürich	<a href="http://www.are.zh.ch/internet/audirektion/are/de/geoinformationen/qis-zh_qis-zentrum/qis-browser.html">http://www.are.zh.ch/internet/audirektion/are/de/geoinformationen/qis-zh_qis-zentrum/qis-browser.html</a>
CH2	Bern	<a href="http://www.be.ch/portal/de/schnellzugriff/karten.html">http://www.be.ch/portal/de/schnellzugriff/karten.html</a>
CH3	Lucerne	<a href="http://www.rawi.lu.ch/index/geoinformation/geoportal.htm">http://www.rawi.lu.ch/index/geoinformation/geoportal.htm</a>
CH4	Schwyz	<a href="http://www.sz.ch/xml_1/internet/de/application/d999/d926/d25271/p25249.cfm">http://www.sz.ch/xml_1/internet/de/application/d999/d926/d25271/p25249.cfm</a>
CH5	Obwalden	<a href="http://www.qis-ow.ch/">http://www.qis-ow.ch/</a>
CH6	Nidwalden	<a href="http://www.qis-ow.ch/">http://www.qis-ow.ch/</a>
CH7	Glarus	<a href="http://geo.gl.ch/maps/Public?visibleLayers=CH-Rahmen,Relief">http://geo.gl.ch/maps/Public?visibleLayers=CH-Rahmen,Relief</a>
CH8	Zug	<a href="http://www.zugmap.ch/zugmap/BM3.asp">http://www.zugmap.ch/zugmap/BM3.asp</a>
CH9	Fribourg	<a href="http://www.geo.fr.ch/">http://www.geo.fr.ch/</a>
CH10	Solothurn	<a href="http://www.so.ch/departemente/bau-und-justiz/soqis.html">http://www.so.ch/departemente/bau-und-justiz/soqis.html</a>
CH11	Basel-Stadt	<a href="http://www.geo-bs.ch/">http://www.geo-bs.ch/</a>
CH12	Basel-Landschaft	<a href="http://www.geo.bl.ch/">http://www.geo.bl.ch/</a>
CH13	Schaffhausen	<a href="http://www.sh.ch/GIS-Karten-und-Plaene.663.0.html">http://www.sh.ch/GIS-Karten-und-Plaene.663.0.html</a>
CH14	Appenzell Ausserrhoden	<a href="http://www.ar.ch/departemente/departement-bau-und-umwelt/tiefbauamt/geoinformationen-und-vermessung/3d-geoportal/">http://www.ar.ch/departemente/departement-bau-und-umwelt/tiefbauamt/geoinformationen-und-vermessung/3d-geoportal/</a>
CH15	Appenzell Innerrhoden	<a href="http://www.geoportal.ch/map.aspx?intem=0&amp;APPLI=4&amp;TOPIC=4&amp;Attr1=KTAI&amp;Attr2=&amp;Attr3=Kanton+AI&amp;ShowPOI=1&amp;Group=1A6E705B10B5222E14F996144E860E3A0D46147D58A080AF57A0A68012E82A11&amp;UID=">http://www.geoportal.ch/map.aspx?intem=0&amp;APPLI=4&amp;TOPIC=4&amp;Attr1=KTAI&amp;Attr2=&amp;Attr3=Kanton+AI&amp;ShowPOI=1&amp;Group=1A6E705B10B5222E14F996144E860E3A0D46147D58A080AF57A0A68012E82A11&amp;UID=</a>
CH16	St Gallen	<a href="http://www.geoportal.ch/map.aspx?intem=1&amp;Topic=1&amp;Attr1=KTSG&amp;ShowPOI=1">http://www.geoportal.ch/map.aspx?intem=1&amp;Topic=1&amp;Attr1=KTSG&amp;ShowPOI=1</a>
CH17	Graubünden	<a href="http://qis.gr.ch/">http://qis.gr.ch/</a>
CH18	Aargau	<a href="https://www.aq.ch/de/dfr/geoportal/geoportal.jsp">https://www.aq.ch/de/dfr/geoportal/geoportal.jsp</a>
CH19	Thurgau	<a href="http://www.thurgis.tg.ch/">http://www.thurgis.tg.ch/</a>
CH20	Vaud	<a href="http://www.vd.ch/themes/territoire/informations-sur-le-territoire/quichet-cartographique/">http://www.vd.ch/themes/territoire/informations-sur-le-territoire/quichet-cartographique/</a>
CH21	Neuchâtel	<a href="http://sitn.ne.ch/">http://sitn.ne.ch/</a>
CH22	Geneva	<a href="http://etat.geneve.ch/sitq/accueil.html">http://etat.geneve.ch/sitq/accueil.html</a>
CH23	Jura	<a href="http://www.jura.ch/DEE/SAT/SIT-Jura/GeoPortail/GeoPortail-du-Jura-Toutes-les-cartes-en-quelques-clics.html">http://www.jura.ch/DEE/SAT/SIT-Jura/GeoPortail/GeoPortail-du-Jura-Toutes-les-cartes-en-quelques-clics.html</a>